

FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT FEB 22 2002 OIPE PATENT & TRADEMARK OFFICE	ATTY. DOCKET NO. 1875.0370000	APPLICATION NO. 09/849,537
	APPLICANT Zhang et al.	
	FILING DATE May 7, 2001	GROUP 2811

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>ML</i>	AA1	5,894,410	04/1999	Barrow	361	760	
<i>ML</i>	AB1	6,020,637	02/2000	Karnezos	257	738	
	AC1						
	AD1						
	AE1						
	AF1						

FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
<i>ML</i>	AG1	10-247702	09/1998	Japan	H01L	23/12	Yes No
	AH1						Yes No
	AI1						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
<i>ML</i>	AJ	<u>1</u>	English-language Abstract of JP 10-247702, published September 14, 1998, from http://www1.jpdl.jpo.go.jp , 2 Pages (last visited January 25, 2002).
	AK	<u>1</u>	
	AL	<u>1</u>	
	AM	<u>1</u>	
	AN	<u>1</u>	

EXAMINER <i>ML</i>	DATE CONSIDERED <i>10/2/02</i>
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
ML	AA1	5,397,921	03/1995	Karnezos	257	779	
	AB1	5,474,957	12/1995	Urushima	437	209	
	AC1	5,534,467	07/1996	Rostoker	437	209	
	AD1	09/984,259	---	Zhao et al.	---	---	10/29/2001
	AE1	09/997,272	---	Zhao et al.	---	---	11/30/2001
	AF1	09/742,366	---	Khan et al.	---	---	12/22/2000
	AG1						
	AH1						
	AI1						

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
ML	AJ1	EP 0 504 411 B1	06/1998	EPO	H01L	23/04	Yes No
	AK1						Yes No
	AL1						Yes No
	AM1						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

ML	AN	1	Ahn, S.H. and Kwon, Y.S., "Popcorn Phenomena in a Ball Grid Array Package", IEEE Transactions on Components, Packaging, and Manufacturing Technology Part B: Advanced Packaging, IEEE, August 1995, Vol. 18, No. 3, pp. 491-96.
ML	AO	1	Amkor Electronics, "Amkor BGA Packaging: Taking The World By Storm", Electronic Packaging & Production, Cahners Publishing Company, May 1994, page unknown.
ML	AP	1	Anderson, L. and Trabucco, B., "Solder Attachment Analysis of Plastic BGA Modules", Surface Mount International Conference, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 189-194.
ML	AQ	1	Andrews, M., "Trends in Ball Grid Array Technology," Ball Grid Array National Symposium, March 29-30, 1995, Dallas, Texas, 10 pages.
ML	AR	1	Attarwala, A.I. Dr. and Stierman, R., "Failure Mode Analysis of a 540 Pin Plastic Ball Grid Array", Surface Mount International Conference, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 252-257.

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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA2					
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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ2					Yes No
	AK2					Yes No
	AL2					Yes No
	AM2					Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

ML	AN	2	Banerji, K., "Development of the Slightly Larger Than IC Carrier (SLICC), Journal of Surface Mount Technology, July 1994, pp. 21-26.
I	AO	2	Bauer, C., Ph.D., "Partitioning and Die Selection Strategies for Cost Effective MCM Designs", Journal of Surface Mount Technology, October 1994, pp. 4-9.
I	AP	2	Bernier, W.E. et al., "BGA vs. QFP: A Summary of Tradeoffs for Selection of High I/O Components", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September1, 1994, San Jose, California, pp. 181-185.
I	AQ	2	Burgos, J. et al., "Achieving Accurate Thermal Characterization Using a CFD Code-- A Case Study of Plastic Packages", IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A, IEEE, December 1995, Vol. 18, No. 4, pp. 732-738.
ML	AR	2	Chadima, M., "Interconnecting Structure Manufacturing Technology," Ball Grid Array National Symposium, Dallas, Texas, March 29-30, 1995.

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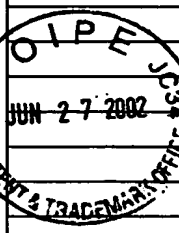
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	AA3						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ3						Yes No
	AK3						Yes No
	AL3						Yes No
	AM3						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

mc	AN	3	Chanchani, R. et al., "Mini BGA: Pad and Pitch Ease Die Test and Handling", Advanced Packaging, IHS Publishing Group, May/June 1995, pp.34, 36-37.
I	AO	3	Chung, T.C. et al., "Rework of Plastic, Ceramic, and Tape Ball Grid Array Assemblies", Ball Grid Array National Symposium Proceedings, Dallas, Texas, March 29-30, 1995, pp. 1-15.
I	AP	3	Cole, M.S. and Caulfield, T. "A Review of Available Ball Grid Array (BGA) Packages", Journal of Surface Mount Technology, Surface Mount Technology Association, January 1996, Vol. 9, pp. 4-11.
I	AQ	3	Cole, M.S. and Caulfield, T., "Ball Grid Array Packaging", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September1, 1994, San Jose, California, pp. 147-153.
mc	AR	3	Dobers, M. and Seyffert, M., "Low Cost MCMs: BGAs Provide a Fine-Pitch Alternative", Advanced Packaging, IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 28, 30 and 32.

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FOREIGN PATENT DOCUMENTS

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	AL4						Yes No
	AM4						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	4	Dody, G. and Burnette, T., "BGA Assembly Process and Rework", Journal of Surface Mount Technology, Surface Mount Technology Association, January 1996, Vol. 9, pp. 39-45.
	AO	4	Edwards, D. et al., "The Effect of Internal Package Delaminations on the Thermal Performance of PQFP, Thermally Enhanced PQFP, LOC and BGA Packages", 45th Electronic Components & Technology Conference, IEEE, May 21-24, 1995, Las Vegas, NV, pp. 285-292.
	AP	4	Ejim, T.L. et al., "Designed Experiment to Determine Attachment Reliability Drivers for PBGA Packages", Journal of Surface Mount Technology, Surface Mount Technology Association, January 1996, Vol. 9, pp. 30-38.
	AQ	4	Ewanich, J. et al., "Development of a Tab (TCP) Ball Grid Array Package", Proceedings of the 1995 International Electronics Packaging Conference, San Diego, CA, September 24-27, 1995, pp. 588-594.
	AR	4	Fausser, S. et al, "High Pin-Count PBGA Assembly", Circuits Assembly, February 1995, Vol 6, No. 2, pp. 36-38 and 40.

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	AJ5						Yes No
	AK5						Yes No
	AL5						Yes No
	AM5						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

mc	AN	5	Fausser, Suzanne et al., "High Pin Count PBGA Assembly: Solder Defect Failure Modes and Root Cause Analysis", Surface Mount International, Proceedings of The Technical Program, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 169-174.
I	AO	5	Ferguson, M. "Ensuring High-Yield BGA Assembly", Circuits Assembly, February 1995, Vol. 6, No. 2, pp. 54, 56 and 58.
I	AP	5	Freda, M., "Laminate Technology for IC Packaging", Electronic Packaging & Production, Cahners Publishing Company, October 1995, Vol. 35, No. 11, pp. S4-S5.
↓	AQ	5	Freedman, M., "Package Size and Pin-Out Standardization", Ball Grid Array National Symposium, March 29-30, 1995, 7 pages.
mc	AR	5	Freyman, B. and Pennisi, R., "Over-molded Plastic Pad Array Carriers (OMPAC): A Low Cost, High Interconnect Density IC Packaging Solution for Consumer and Industrial Electronics", 41st Electronic Components & Technology Conference, IEEE, May 11-16, 1991, pp. 176-82.

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	AA6						
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	AJ6						No
	AK6						Yes No
	AL6						Yes No
	AM6						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

MC	AN	6	Freyman, B. et al., "Surface Mount Process Technology for Ball Grid Array Packaging", Surface Mount International Conference Proceedings, Surface Mount International, August 29-September 2, 1993, San Jose, California, pp. 81-85.
I	AO	6	Freyman, B. et al., "The Move to Perimeter Plastic BGAs", Surface Mount International Conference Proceedings, San Jose, CA, August 29-31, 1995, pp. 373-382.
I	AP	6	Freyman, B., "Trends in Plastic BGA Packaging," Ball Grid Array National Symposium, Dallas, Texas, March 29-30, 1995, 45 pages.
↓	AQ	6	Gilleo, K., "Electronic Polymers: Die Attach and Oriented Z-Axis Films", Advanced Packaging, IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 37-38, 40 and 42.
MC	AR	6	Guenin, B. et al., "Analysis of a Thermally Enhanced Ball Grid Array Package", IEEE Transactions on Components, Packaging, and Manufacturing Technology, Part A, IEEE Components, Packaging, and Manufacturing Technology Society, December 1995, Vol. 18, No. 4, pp. 749-757.

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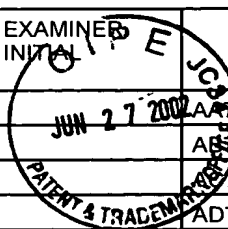
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	AD7					
	AE7					
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	AG7					
	AH7					
	AI7					

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ7					Yes No
	AK7					Yes No
	AL7					Yes No
	AM7					Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

MC	AN	Z	Hart, C., "Vias in Pads for Coarse and Fine Pitch Ball Grid Arrays", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 203-207.
J	AO	Z	Hart, C. "Vias in Pads", Circuits Assembly, February 1995, Vol. 6, No. 2, pp. 42, 44-46 and 50.
	AP	Z	Hattas, D., "BGAs Face Production Testing: New Package Offers Promise but Must Clear Technology Hurdles.", Advanced Packaging, IHS Publishing Group, Summer 1993, Vol. 2, No. 3, pp. 44-46.
	AQ	Z	Heitmann, R., "A Direct Attach Evolution: TAB, COB and Flip Chip Assembly Challenges", Advanced Packaging, IHS Publishing Group, July/August 1994, Vol. 3, No. 4, pp. 95-99 and 103.
MC	AR	Z	Hodson, T., "Study Examines BGA Use", Electronic Packaging & Production, March 1993, page unknown.

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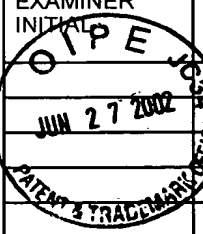
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	AA8						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ8						Yes No
	AK8						Yes No
	AL8						Yes No
	AM8						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

mc	AN	8	Holden, H., "The Many Techniques of Small Via Formation for Thin Boards", The Institute for Interconnecting and Packaging Electronic Circuits Ball Grid Array National Symposium, San Diego, CA, January 18-19, 1996, pp. 1-7.
I	AO	8	Houghten, J., "New Package Takes On QFPs", Advanced Packaging, IHS Publishing Group, Winter 1993, Vol. 2, No. 1, pp. 38-39.
I	AP	8	"How To Give Your BGAs A Better Bottom Line.", Advanced Packaging, IHS Publishing Group, January/February 1995, page unknown.
I	AQ	8	Huang, W. and Ricks, J., "Electrical Characterization of PBGA for Communication Applications by Simulation and Measurement", National Electronic Packaging and Production Conference West '95, February 26-March 2, 1995, Anaheim, California, pp. 300-307.
mc	AR	8	Hundt, M. et al., "Thermal Enhancements of Ball Grid Arrays", National Electronic Packaging and Production Conference West '95, Reed Exhibition Companies, Anaheim, CA, February 25-29, 1996, pp. 702-711.

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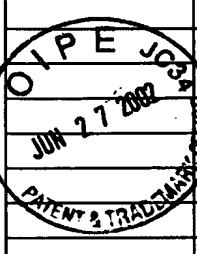
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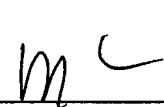
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FOREIGN PATENT DOCUMENTS

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	AJ9						Yes No
	AK9						Yes No
	AL9						Yes No
	AM9						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	9	Hutchins, C.L., "Understanding Grid Array Packages", Surface Mount Technology Magazine, IHS Publishing Group, November 1994, Vol. 8, No. 11, pp. 12-13.
	AO	9	Hwang, J.S., "Reliability of BGA Solder Interconnections", Surface Mount Technology Magazine, IHS Publishing Group, September 1994, Vol. 8, No. 9, pp. 14-15.
	AP	9	Hwang, J.S., "A Hybrid of QFP and BGA Architectures", Surface Mount Technology Magazine, IHS Publishing Group, February 1995, Vol. 9, No. 2, p. 18.
	AQ	9	Johnson, R. et al., "A Feasibility Study of of Ball Grid Array Packaging", National Electronic Packaging and Production Conference East '93, Boston, Massachusetts, June 14-17, 1993, pp. 413-422.
	AR	9	Johnson, R. et al., "Thermal Characterization of 140 and 225 Pin Ball Grid Array Packages", National Electronic Packaging & Production Conference East '93, Boston, Massachusetts, June 14-17, 1993, pp. 423-430.

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	AJ10					Yes No
	AK10					Yes No
	AL10					Yes No
	AM10					Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

ML	AN	10	Johnston, P., "Land Pattern Interconnectivity Schemes", Ball Grid Array National Symposium, Dallas, Texas, March 29-30, 1995, pages 2-21.
	AO	10	Johnston, P. "Printed Circuit Board Design Guidelines for Ball Grid Array Packages", Journal of Surface Mount Technology, Surface Mount Technology Association, January 1996, Vol. 9, pp. 12-18.
	AP	10	Kawahara, T. et al., "Ball Grid Array Type Package By Using of New Encapsulation Method", Proceedings of the 1995 International Electronics Packaging Conference, San Diego, CA, September 24-27, 1995, pp. 577-587.
	AQ	10	Knickerbocker, J.U. and Cole, M.S., "Ceramic BGA: A Packaging Alternative", Advanced Packaging, IHS Publishing Group, January/February 1995, Vol. 4, No. 1, pp. 20, 22 and 25.
	AR	10	Kromann, G., et al., "A Hi-Density C4/CBGA Interconnect Technology for a CMOS Microprocessor", National Electronic Packaging and Production Conference West '95, IEEE, February 26-March 2, 1995, Anaheim, California, pp. 1523-1529.

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	AJ11						Yes No
	AK11						Yes No
	AL11						Yes No
	AM11						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

mc	AN	11	Kunkle, R., "Discrete Wiring for Array Packages", Ball Grid Array National Symposium, Dallas, Texas, March 29-30, 1995, 9 pages.
I	AO	11	Lall, B. et al, "Methodology for Thermal Evaluation of Multichip Modules", IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A, IEEE, December 1995, Vol. 18, No. 4, pp. 758-764.
I	AP	11	Lasance, C. et al., "Thermal Characterization of Electronic Devices with Boundary Condition Independent Compact Models", IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A, IEEE Components, Packaging, and Manufacturing Technology Society, December 1995, Vol. 18, No. 4, pp. 723-731.
I	AQ	11	Lau, J., "Ball Grid Array Technology", McGraw-Hill Inc., 1995, entire book submitted.
I	AR	11	Lau, J. et al., "No Clean Mass Reflow of Large Plastic Ball Grid Array Packages", Circuit World, Wela Publications Ltd., Vol. 20, No. 3, March 1994, pp.15-22.

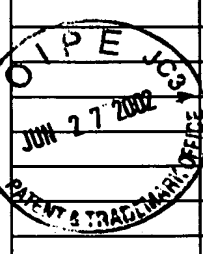
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ12						Yes No
	AK12						Yes No
	AL12						Yes No
	AM12						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

mc	AN	12	"Literature Review", Special Supplement to Electronic Packaging & Production, February 1995, Cahners Publication, 10 pages.
	AO	12	LSI LOGIC Package Selector Guide, Second Edition, LSI Logic Corporation, 1994-1995, entire document submitted.
	AP	12	"LTCC MCMs Lead to Ceramic BGAs," Advanced Packaging, IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 14-15.
	AQ	12	Mak, Dr. W.C. et al., "Increased SOIC Power Dissipation Capability Through Board Design and Finite Element Modeling", Journal of Surface Mount Technology, Surface Mount International, October 1994, pp. 33-41.
	AR	12	Marrs, R.C. and Olachea, G., "BGAs For MCMs: Changing Markets and Product Functionality", Advanced Packaging, IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 48, 50, and 52.

EXAMINER

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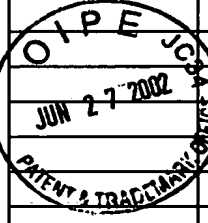
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.
1875.0370000APPLICATION NO.
09/849,537APPLICANT
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA13						
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	AC13						
	AD13						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ13						Yes No
	AK13						Yes No
	AL13						Yes No
	AM13						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

mc	AN	13	Matthew, L.C. et al., "Area Array Packaging: KGD in a Chip-Sized Package", Advanced Packaging, IHS Publishing Group, July/August 1994, pp. 91-94.
I	AO	13	Mawer, A. et al., "Plastic BGA Solder Joint Reliability Considerations", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 239-251.
I	AP	13	Mazzullo, T. and Schaertl, L., "How IC Packages Affect PCB Design", Surface Mount Technology Magazine, February 1995, Vol. 9, No. 2, pp. 114-116.
I	AQ	13	Mearig, J., "An Overview of Manufacturing BGA Technology", National Electronic Packaging and Production Conference West '95, February 26-March 2, 1995, Anaheim, California, pp. 295-299.
mc	AR	13	Mertol, A., "Application of the Taguchi Method on the Robust Design of Molded 225 Plastic Ball Grid Array Packages", IEEE Transactions on Components, Packaging, and Manufacturing Technology Part B: Advanced Packaging, IEEE, November 1995, Vol. 18, No. 4, pp. 734-743.

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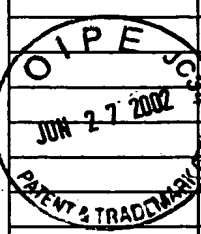
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ14						Yes No
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	AL14						Yes No
	AM14						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

ML	AN	14	Mescher, P. and Phelan, G., "A Practical Comparison of Surface Mount Assembly for Ball Grid Array Components", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 164-168.
I	AO	14	Mulgaonker, S. et al., "An Assessment of the Thermal Performance of the PBGA Family", Eleventh Annual IEEE Semiconductor Thermal Measurement and Management Symposium, IEEE, San Jose, CA, February 7-9, 1995, pp. 17-27.
I	AP	14	"New PBGA Pushes Technology to Outer Limits", Advanced Packaging, IHS Publishing Group, January/February 1995, page 11.
I	AQ	14	Olachea, G., "Managing Heat: A Focus on Power IC Packaging", Electronic Packaging & Production (Special Supplement), Cahners Publishing Company, November 1994, pp. 26-28.
U	AR	14	"Pad Array Improves Density", Electronic Packaging & Production, Cahners Publishing Company, May 1992, pp. 25-26.

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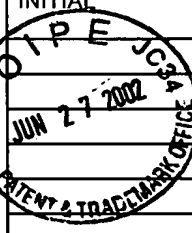
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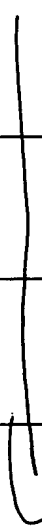
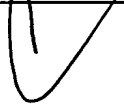
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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
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FOREIGN PATENT DOCUMENTS

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

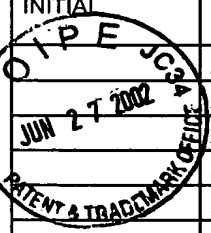
  	AN	15	Partridge, J. and Viswanadham, P., "Organic Carrier Requirements for Flip Chip Assemblies", Journal of Surface Mount Technology, Surface Mount Technology Association, July 1994, pp. 15-20.
	AO	15	Ramirez, C. and Fauser, S., "Fatigue Life Comparison of The Perimeter and Full Plastic Ball Grid Array", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 258-266.
	AP	15	Rogren, P., "MCM-L Built on Ball Grid Array Formats", National Electronic Packaging and Production Conference West '94, Anaheim, California, pp. 1277-1282.
	AQ	15	Rooks, S., "X-Ray Inspection of Flip Chip Attach Using Digital Tomosynthesis", Surface Mount International, Proceedings of The Technical Program, August 28-September 1, 1994, San Jose, California, pp. 195-202.
	AR	15	Rukavina, J., "Attachment Methodologies: Ball Grid Array Technology", Ball Grid Array National Symposium, Dallas, Texas, March 29-30, 1995, 37 pages.

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DATE CONSIDERED

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FORM PTO-1449 SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET NO. 1875.0370000	APPLICATION NO. 09/849,537
	APPLICANT Zhang <i>et al.</i>	
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
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	AJ16						Yes No
	AK16						Yes No
	AL16						Yes No
	AM16						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
MC	AN	16	Sack, T., "Inspection Technology", Ball Grid Array National Symposium, Dallas, Texas, March 29-30, 1995, pages 1-41.
	AO	16	Sakaguchi, H., "BGA Mounting Technology," pgs. 1-4, date and source unknown.
	AP	16	Schmolze, C. and Fraser, A., "SPICE Modeling Helps Enhance BGA Performance", Electronic Packaging & Production, January 1995, pp. 50-52.
	AQ	16	Semiconductor Group Package Outlines Reference Guide, Texas Instruments, 1995, entire document submitted.
	AR	16	Shimizu, J., "Plastic Ball Grid Array Coplanarity", Surface Mount International Conference, San Jose, California, August 31-September 2, 1993, pp. 86-91.
EXAMINER			DATE CONSIDERED 10/2/02

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ17						Yes No
	AK17						Yes No
	AL17						Yes No
	AM17						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

ML	AN	17	Sigliano, R., "Using BGA Packages: An Appealing Technology in a QFP and Fine-Pitch Market", Advanced Packaging, IHS Publishing Group, March/April 1994, pp. 36-39.
	AO	17	Sirois, L., "Dispensing for BGA: Automated Liquid Dispensing in a High-Density Environment", Advanced Packaging, IHS Publishing Group, May/June 1995, pp. 38 and 41.
	AP	17	Solberg, V., "Interconnection Structure Preparation: Impact of Material Handling and PCB Surface Finish on SMT Assembly Process Yield", Ball Grid Array National Symposium, Dallas Texas, March 29-30, 1995, 10 pages.
	AQ	17	"Survival of the Fittest", Advanced Packaging, IHS Publishing Group, March/April 1995, page unknown.
	AR	17	Tuck, J., "BGA Technology Branches Out", Circuits Assembly, February 1995, Vol. 6, No. 2, pp. 24, 26, and 28.

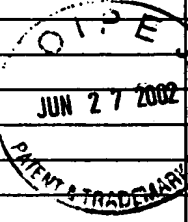
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	APPLICANT Zhang <i>et al.</i>	
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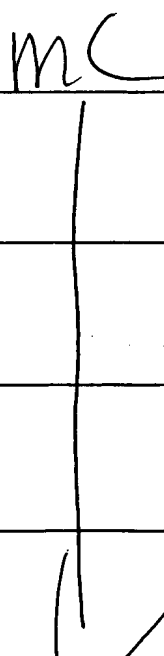
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ18						Yes No
	AK18						Yes No
	AL18						Yes No
	AM18						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	18	"Tutorial and Short Courses", 45th Electronic Components & Technology Conference, May 21-24, 1995, Las Vegas, Nevada, IEEE, 6 pages.
	AO	18	Vardaman, E. J. and Crowley, R.T., "Worldwide Trends In Ball Grid Array Developments", National Electronic Packaging and Production Conference West '96, Reed Exhibition Companies, Anaheim, CA, February 25-29, 1996, pp. 699-701.
	AP	18	Walshak, D. and Hashemi, H., "Thermal Modeling of a Multichip BGA Package", National Electronic Packaging and Production Conference West '94, Reed Exhibition Companies, Anaheim, California, February 27-March 4, 1994, pp. 1266-1276.
	AQ	18	Walshak, D. and Hashemi, H., "BGA Technology: Current and Future Direction for Plastic, Ceramic and Tape BGAs", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 157-163.
	AR	18	Xie, H. et al., "Thermal Solutions to Pentium Processors in TCP in Notebooks and Sub-Notebooks", 45th Electronic Components & Technology Conference, IEEE, Las Vegas, NV, May 21-24, 1995, pp. 201-210.

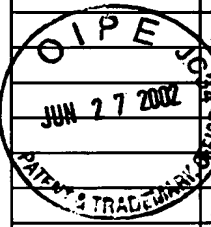
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DATE CONSIDERED

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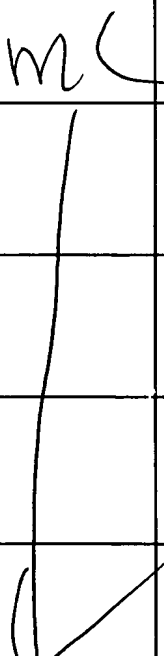
U.S. PATENT DOCUMENTS


EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA19						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AJ19						Yes No
	AK19						Yes No
	AL19						Yes No
	AM19						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>19</u>	Yip, W.Y., "Package Characterization of a 313 Pin BGA", National Electronic Packaging and Production Conference West '95, Reed Exhibition Companies, February 26-March 2, 1995, Anaheim, California, pp. 1530-1541.
	AO	<u>19</u>	Zamborsky, E., "BGAs in the Assembly Process", Circuits Assembly, February 1995, Vol. 6, No. 2, pp. 60, 62-64.
	AP	<u>19</u>	Zimmerman, M., "High Performance BGA Molded Packages for MCM Application", Surface Mount International Conference Proceedings, Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 175-180.
	AQ	<u>19</u>	Zweig, G., "BGAs: Inspect the Process, Not the Product", Electronic Packaging & Production (Special Supplement), Cahners Publishing Company, August 1994 (Supplement), p. 41.
	AR	<u>19</u>	Houghten, J.L., "Plastic Ball-Grid Arrays Continue To Evolve", Electronic Design, February 6, 1995, pp. 141-146.

EXAMINER 	DATE CONSIDERED <u>5/8/02</u>
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA20						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
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	AK20						Yes No
	AL20						Yes No
	AM20						Yes No

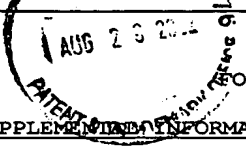
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

MC	AN	20	Marrs, R. et al., "Recent Technology Breakthroughs Achieved with the New <i>SuperBGA</i> ® Package", 1995 International Electronics Packaging Conference, San Diego, California, September 24-27, 1995, pp. 565-576.
MC	AO	20	Hayden, T.F. et al., "Thermal & Electrical Performance and Reliability Results for Cavity-Up Enhanced BGAs", Electronic Components and Technology Conference, IEEE, 1999, pp. 638-644.
MC	AP	20	Thompson, T., "Reliability Assessment of a Thin (Flex) BGA Using a Polyimide Tape Substrate", International Electronics Manufacturing Technology Symposium, IEEE, 1999, pp. 207-213.
	AQ	20	
	AR	20	

EXAMINER

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 SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT FORM PTO-1449	ATTY. DOCKET NO. 1875.0370000	APPLICATION NO. 09/849,587
	APPLICANT Zhang et al.	
	FILING DATE May 7, 2001	GROUP 2822

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
MC	AA1	5,291,062	03/1994	Higgins, III			
	AB1	5,583,377	12/1996	Higgins, III			
	AC1	5,953,589	09/1999	Shim et al.			
	AD1	6,184,580 B1	02/2001	Lin			
MC	AE1	2001/0045644 A1	11/2001	Huang			
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
MC	AJ1	JP 11-17064	01/1999	Japan	H01L	23/14	Yes No
MC	AK1	JP 11-102989	04/1999	Japan	H01L	23/12	Yes No
MC	AL1	JP 7-283336	10/1995	Japan	H01L	23/12	Y s No
	AM1						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

MC	AN	1	English-language Abstract of Japanese Patent Publication No. 11-017064, 1 Page (January 22, 1999 - Date of publication of application).
MC	AO	1	English-language Abstract of Japanese Patent Publication No. 11-102989, 1 Page (April 13, 1999 - Date of publication of application).
MC	AP	1	English-language Abstract of Japanese Patent Publication No. 07-283336, 1 Page (October 27, 1995 - Date of publication of application).
MC	AQ	1	Copy of International Search Report issued July 25, 2002 for Appln. No. PCT/US01/44955, 4 pages.
	AR	1	

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